

Exploring the Impact of Student-, Instructor-, and Course-level Factors on Student Learning in Online English Language and Literature Courses

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MICHIGAN VIRTUAL LEARNING[®]
RESEARCH INSTITUTE

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- Research – Expand the K-12 online and blended learning knowledge base through high-quality, high impact research;
- Policy – Inform local, state, and national public education policy strategies that reinforce and support online and blended learning opportunities for the K-12 community;
- Innovation – Experiment with new technologies and online learning models to foster expanded learning opportunities for K-12 students; and
- Networks – Develop human and web-based applications and infrastructures for sharing information and implementing K-12 online and blended learning best practices.

Michigan Virtual dedicates a small number of staff members to *MVLRI* projects as well as augments its capacity through a fellows program drawing from state and national experts in K-12 online learning from K-12 schooling, higher education, and private industry. These experts work alongside *Michigan Virtual* staff to provide research, evaluation, and development expertise and support.

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Executive Summary

This study examines English language and literature learning in online high school settings. Specifically, student-, instructor-, and content-level factors are explored to see their relationship with students' online learning success. The aim of this study is to better understand what course design elements could be beneficial for students' language development in an online learning environment.

Key findings include the following:

- Project-based assignments were beneficial for all students in online English language learning. While having more quizzes in the course had a negative effect on students' final grades, taking quizzes did not have a negative impact on credit recovery students' learning as it did for students who took online courses for other reasons.
- Text-based learning resources, such as instructor guides, helped students gain better learning outcomes at the end of the semester.
- Engaging students in more low-level knowledge activities such as remembering, had a negative impact on their learning outcomes.
- For online language learning, giving students autonomy in their own learning, promoting discussions and feedback exchange, and strengthening students' sense of audience and authorship were of vital importance for students' learning success.

Introduction

The enrollment of K-12 distance education courses has increased dramatically over the past several years, from 1.8 million during the 2009-10 school year (Zandberg & Lewis, 2008) to 3.8 million during the 2014-15 school year (Watson, Pape, Murin, Gemin, & Vashaw, 2015). Among all subject areas, language courses present a unique challenge in K-12 online education. The lack of body language and non-verbal cues, which are of great importance to language learning, may affect the level of communication and interaction in online environments. Previous studies have suggested mixed findings regarding the effectiveness of online language courses compared to face-to-face language courses. Thus, it is even more important to closely investigate online language courses and the factors contributing to online learning success.

Literature Review

Based on a meta-analysis of 19 studies examining the effects of distance education on K-12 academic achievement compared to traditional methods, all content area courses resulted in positive effect sizes, except for foreign language courses (Cavanaugh, 2001). This meta-analysis showed a small positive effect size of 0.43 in English language arts courses, while a negative effect size of -0.8 in foreign language courses. Cavanaugh further called for a more careful evaluation of online language courses in K-12 settings. Similarly, Means, Toyama, Murphy, and Baki (2013) compared the effectiveness of online/blended learning with face-to-face instruction in both K-12 and higher education, and this meta-analysis revealed a positive effect towards online instruction, especially in blended learning. Although this study did not specify the effect sizes in each content area, it was mentioned that no differences were detected among subject areas. In contrast, a recent report of Michigan's K-12 virtual learning effectiveness (Freidhoff, 2017) showed that the average pass rate for virtual students in their virtual English Language and Literature (ELL) courses in 2015-

2016 was 54%, lower than the pass rate for their non-virtual ELL courses, which was 77%. However, this difference was not distinct compared to other subject areas. Further analysis showed that students from town locale had a higher pass rate in online ELL courses (66%), higher than the pass rates of students from suburban (58%), rural (57%), and city locales (49%).

While looking into the challenges students have in learning ELL course content online, Jabeen and Thomas's study (2015), although conducted among adult learners, suggested that a lack of sufficient interactions, immediate feedback, opportunities to practice the target language online, and technology training were the key obstacles in learning languages online. Similarly, Zheng, Young, Wagner, & Brewer (2009) pointed out online learners usually had less opportunity to interact with the social, cultural, and linguistic cues that were present in face-to-face language interactions.

From a sociocultural perspective, social interaction is an important component of language learning, and learners develop their language skills through meaning negotiation (Lantolf & Thorne, 2008). This is also the case in online environments. Swan (2003) has stressed the importance of interaction in online learning. There are usually three types of interactions as proposed by Moore (1989), which include learner-learner, learner-instructor, and learner-content interactions. Moore's framework allows the field to understand the three important components of online learning: learner, instructor, and content. Drawing upon Moore's conceptions of interactions, this study investigated how the three levels of components affected students' learning outcomes in online high school English language courses.

The three research questions explored in this study include the following:

- How did student-, instructor-, and course-level factors affect students' learning outcomes in online English language and literature courses?
- Did the effects differ between credit-recovery and non-credit-recovery students?
- What are some of the key themes that could be potentially beneficial for students' English language development?

Research Methods

In this study, eight English Language and Literature courses offered at *Michigan Virtual School*[®] (MVS[®]) in the 2015-16 school year were examined, including English 9A, English 9B, English 10A, English 10B, British Literature 11A, British Literature 11B, American Literature 12A, and American Literature 12B.

Participants

Participants included students enrolled in any of these eight courses during the 2015-16 school year; the initial number was 1,026. However, for the purpose of multilevel analysis, this report focused on students who took only one course per semester, thus 47 students who took more than one course were removed, leaving a total of 979 students. Next, the researcher removed student identifications without login information and those whose teacher did not provide any education background data (one part-time instructor). This process removed another 60 students. Thus, a total of 919 learners taught by 13 instructors in the eight courses were involved in this study.

Data Source

Two sources of data were collected. First, students' demographic information, final scores, and their login activities on BlackBoard, as well as instructor information, were collected directly from the learning management system (LMS) dataset provided by MVS. In addition, the researcher was granted access to the completed online courses, thus course-level information was hand-coded by the researcher.

Measurement

Student-level Variables

Student-level variables include gender, special education status, reasons for taking online courses, login times, login duration, and final grades.

Male

Male is a binary variable in which "1" refers to male students and "0" refers to female students.

Special Education

Special Education is a dummy variable in which "1" refers to students who receive special education and "0" refers to those who do not.

Reasons for Taking Online Courses

The dataset provides information about students' reasons for taking online courses. The categories are: 1) the course being unavailable at the local school, 2) credit recovery, 3) learning preferences, 4) scheduling conflict, and 5) other.

Login Times

This variable identifies the number of times students logged into the LMS during the semester.

Login Duration

This variable identifies the total duration time students were logged into the LMS during the semester. In the original dataset, this variable was reported in minutes. For the ease of analysis, this variable was recoded into hours.

Final Grade

This variable represents students' final grades reported to MVS.

Instructor-level Variables

Instructor-level variables included instructors' education level and instructor type.

Education Level

This variable is represented by a dummy variable with "1" referring to instructors with a master's degree and "0" referring to instructors with a bachelor's degree.

Instructor Type

This variable has four categories: full-time instructor, lead instructor, part-time instructor, and iEducator. iEducator refers to novice teachers who have recently completed their teacher-

preparation programs and started to work in MVS as online instructors while being trained in how to teach in a digital environment. Three dummy variables were generated using full-time instructor as the base category.

Course-level Variables

Courses were coded from three different aspects: assignment type, resources type, and knowledge taxonomy.

Assignment type and resources type were coded using a bottom-up coding strategy. Assignments were coded into five categories: text-based assignment, multimedia assignment (e.g., audio or video assignment), quiz, discussion, and project-based assignment (e.g., asking students to create a PowerPoint with a research topic). Learning resources were coded into two categories: text-based resources (i.e., text reading, instructor guide) and multimedia resources (i.e., website links, infographics, audio files, and videos). Knowledge taxonomy was coded using a top-down strategy, according to the revised Bloom's taxonomy (Anderson et al., 2001) with a total of six categories: remember, understand, apply, analyze, evaluate, and create.

Data Analysis

For the first two research questions, descriptive statistics were used to depict the student-, instructor-, and course-level variations. Furthermore, a cross-classified two-level random effect model, with student-level data nested in the combination of instructor- and course-level data, was adopted in this study to investigate the effect of student-, instructor-, and course-level factors on students' online learning outcomes. To answer the third research question, following the results from quantitative analysis, content analysis was used to explore some of the key themes in course design that might help improve students' language development.

Results

Student-Level Descriptive Statistics

Among the 919 students who took only one English language and literature course during either the fall, spring, or summer semester of the 2015-16 school year, 43.0% were male and 57.0% were female students. Among all students, 8.4% of them reported receiving special education.

Students enrolled in these online courses for various reasons (as listed above in *Student Level Variables*). The most frequently selected category was "learning preference of the student," with 33.0% of students taking online course for this reason, followed by 25.2% who indicated "other," "scheduling conflict" (22.3%), "credit recovery" (12.6%), and "course unavailable at local school" (6.9%).

In terms of login activities during the online course they took, students logged into the LMS an average of 79.18 times ($SD = 40.86$) throughout the semester with the maximum number of 294 login times per semester and minimum number of one login time. As one semester usually includes 16 weeks, the average number of login times per week was about 4.95. In terms of the length of time spent logged in, students' average time staying in the LMS was 81.56 hours ($SD = 68.20$) throughout the semester with as long as 707 hours and as short as zero hours logged in. The average duration

of logging in per week was around 5.10 hours. Lastly, students' final grades were also collected; they scored an average of 73.44 ($SD = 29.37$) points for the course they took (see Table 1).

Table 1. Descriptive Statistics of Student-Level Variables

Student-level variables (n= 919)	M	SD	Min	Max
Final grades	73.44	29.37	0.0	100
Login times	69.18	40.86	1.0	294
Duration logged in	81.56	68.20	0.0	707
Male	0.43	0.50	0.0	1
Special Education	0.08	0.28	0.0	1
Reason1: Learning preference of the student	0.33	0.47	0.0	1
Reason 2: Scheduling conflict	0.22	0.42	0.0	1
Reason 3: Credit recovery	0.13	0.33	0.0	1
Reason 4: Course unavailable at local school	0.07	0.25	0.0	1
Reason 5: Other	0.25	0.43	0.0	1

Final Grades by Gender

On average, female students gained higher final grades than their male peers (see Table 2).

Table 2. Final Grades by Gender

Gender	N	M	SD
Male	395	70.34	30.35
Female	524	75.74	28.41

Final Grades by Special Education Status

Students who received special education gained lower final grades than their counterparts (see Table 3).

Table 3. Final Grades by Special Education Status

Status	N	M	SD
Special education	77	66.19	34.35
Non-special education	842	74.10	28.80

Final Grade by Reasons for Taking Online Courses

From Table 4, students who took online courses because of a "scheduling conflict" received the highest average final grades, while students who took online courses for "credit recovery" received the lowest average final grades.

Table 4. Final Grades by Reasons for Taking Online Courses

Enrollment Reason	N	M	SD
Course unavailable at local school	63	74.01	26.01
Credit recovery	116	51.75	33.60
Learning preference of the student	303	76.60	28.28
Scheduling conflict	205	81.27	20.34
Other	232	73.07	31.11

Instructor-Level Descriptive Statistics

A total of 13 instructors were involved in this study. Among them, eight had a master's degree and five held a bachelor degree. Their majors ranged from English Education, Secondary English Education, and K-12 curriculum, to Curriculum & Teaching, and Communication. In terms of their instructor type, 30% of the teachers were iEducators, followed by 27% full-time, 24% lead instructors, and 19% part-time instructors.

Table 5. Descriptive Statistics of Instructor-level Variables

Instructor-level variables (n=13)	M	SD
Master degree	0.64	0.48
Full-time Instructor	0.27	0.45
Lead Instructor	0.24	0.43
Part-time Instructor	0.19	0.39
iEducator	0.30	0.46

Course-Level Descriptive Statistics

Three course-level factors were closely examined and hand-coded in this study: assignment type, resources type, and knowledge taxonomy. For assignment type, the most frequently designed assignments across the eight courses were text-based assignments ($M = 20.82$, $SD = 5.66$) with some courses having as many as 28 and others having as few as 10 assignments. The second most frequently adopted assignment was discussion, the average number of which was 15.78 with as many as 34 discussions in some courses and as few as six in others. Following these two were quizzes ($M = 9.34$, $SD = 2.36$), project-based assignments ($M = 0.42$, $SD = 0.49$) and multimedia assignments ($M = 0.29$, $SD = 0.45$).

For teaching resources, online text reading and instructor guide were combined as text-based resources, while infographics, websites, audios, and videos were combined as multimedia resources. These courses included an average of 29.33 ($SD = 8.03$) multimedia resources and an average of 21.90 ($SD = 4.77$) text-based resources. Multimedia resources were as many as 40 and as few as 18 across the eight courses, while text-based resources were as many as 31 and as few as 16.

Finally, the researcher examined different assignments using the revised Bloom's taxonomy (Anderson et al., 2001). The most frequently covered knowledge level across all assignments was analyze ($M = 14.60$, $SD = 4.91$), followed by create ($M = 13.29$, $SD = 3.88$), understand ($M = 11.11$, $SD = 5.89$), evaluate ($M = 10.61$, $SD = 3.76$), remember ($M = 1.81$, $SD = 2.56$) and apply ($M = 1.68$, $SD = 1.41$). The result shows that, in general, all of the English language and literature courses engaged students in higher knowledge level activities, such as analyzing a reading text and creating their own writing or projects. Lower level skills such as remembering were least frequently used in online language learning.

Table 6. Descriptive Statistics of Course-level Variables

Course-level variables (n = 8)	M	SD	Min	Max
Text assignment	20.82	5.66	10.0	28
Multimedia assignment	0.29	0.45	0.0	1
Project-based assignment	0.42	0.49	0.0	1
Quiz	9.34	2.36	6.0	13
Discussion	15.78	7.83	6.0	34
Text resources	21.90	4.77	16.0	31
Multimedia resources	29.33	8.03	18.0	40
Remember	1.81	2.56	0.0	9
Understand	11.11	5.89	3	27
Apply	1.68	1.41	0	4
Analyze	14.60	4.91	7	22
Evaluate	10.61	3.76	4	15
Create	13.29	3.88	4	21

Impact on Learning Outcomes

What impact do student, instructor, and course indicators, as well as their interactions, have on students' learning outcomes? To examine this research question, a two-level model was used to examine how student-, instructor-, and course-level factors may affect students' learning outcomes in online English language and literature courses. The results are presented in Table 7.

Table 7. A Two-level Hierarchical Linear Model Predicting Learning Outcome from Student-, Instructor-, and Course-level Factors

	Model 1: Unconditional Model	Model 2: Model 1 plus student- level variables	Model 3: Model 2 plus instructor- level variables	Model 4: Model 3 plus course-level assignment types	Model 5: Model 4 plus interaction	Model 6: Model 3 plus course- level teaching resource types	Model 7: Model 6 plus interaction	Model 8: Model 3 plus course- level knowledge taxonomy	Model 9: Model 8 plus interaction
Login times		0.29*** (13.68)	0.29*** (13.70)	0.29*** (13.87)	0.30*** (13.97)	0.29*** (13.59)	0.29*** (13.60)	0.29*** (13.52)	0.29*** (13.62)
Duration		0.10*** (7.72)	0.10*** (7.80)	0.10*** (7.71)	0.09*** (7.65)	0.10*** (7.74)	0.10*** (7.75)	0.10*** (8.02)	0.10*** (8.06)
Male		-0.22 (-0.14)	0.27 (0.17)	0.36 (0.23)	0.48 (0.30)	0.42 (0.26)	0.48 (0.31)	0.35 (0.23)	0.58 (0.37)
Special education		-7.19** (-2.60)	-7.65** (-2.79)	-7.57** (-2.76)	-7.70** (-2.81)	-7.48** (-2.72)	-7.40** (-2.69)	-7.41** (-2.72)	-7.36** (-2.71)
Credit recovery		-12.74*** (-5.21)	-12.91*** (-5.29)	-13.30*** (-5.43)	-44.21** (-2.81)	-13.44*** (-5.57)	-1.93 (-0.17)	-12.90*** (-5.31)	-14.37 (-0.61)
Master degree (Instructors')			-10.11*** (-3.39)	-10.07** (-3.13)	-9.37** (-2.90)	-12.30*** (-4.78)	-12.43*** (-4.82)	-14.19*** (-5.49)	-13.18*** (-5.05)
Lead instructor			-0.02 (-0.01)	-0.48 (-0.15)	0.28 (0.08)	1.04 (0.33)	0.92 (0.29)	-0.04 (-0.01)	0.82 (0.26)
Part-time instructor			1.13 (0.46)	0.27 (0.11)	0.67 (0.26)	2.45 (1.06)	2.49 (1.08)	1.88 (0.81)	2.03 (0.88)
iEducator			-5.45* (-2.41)	-6.34** (-2.79)	-6.21** (-2.67)	-4.77* (-2.12)	-5.04* (-2.23)	-5.83** (-2.62)	-5.81** (-2.61)
Text-based assignments				-0.38 (-1.63)	-0.32 (-1.33)				
Multimedia assignments				-7.42 (-1.82)	-8.92* (-2.17)				
Project-based assignments				6.92* (2.49)	8.61** (2.96)				
Quiz				-1.76* (-2.45)	-2.34** (-3.10)				

	Model 1: Unconditional Model	Model 2: Model 1 plus student- level variables	Model 3: Model 2 plus instructor- level variables	Model 4: Model 3 plus course-level assignment types	Model 5: Model 4 plus interaction	Model 6: Model 3 plus course- level teaching resource types	Model 7: Model 6 plus interaction	Model 8: Model 3 plus course- level knowledge taxonomy	Model 9: Model 8 plus interaction
Discussions				-0.36* (-2.46)	-0.35* (-2.32)				
Credit recovery *Project-based assignments					-9.42 (-1.75)				
Credit recovery *Quiz					2.75* (2.18)				
Credit recovery *Discussion					0.48 (1.33)				
Text-based resources						0.55** (2.58)	0.62** (2.77)		
Multimedia resources						-0.11 (-0.94)	-0.10 (-0.87)		
Credit recovery *Text-based resources							-0.53 (-1.02)		
Lower-level knowledge								-0.86*** (-3.87)	-0.92*** (-4.04)
Higher-level knowledge								-0.38* (-2.39)	-0.31 (-1.88)
Credit recovery *Lower-level knowledge									0.52 (0.89)
Credit recovery *Higher-level knowledge									-0.16 (-0.39)
Constant	71.93*** (32.06)	46.79*** (18.02)	55.35*** (14.83)	85.07*** (9.13)	87.91*** (9.36)	47.31*** (6.73)	45.71*** (6.35)	84.34*** (8.59)	81.23*** (8.00)

	Model 1: Unconditional Model	Model 2: Model 1 plus student- level variables	Model 3: Model 2 plus instructor- level variables	Model 4: Model 3 plus course-level assignment types	Model 5: Model 4 plus interaction	Model 6: Model 3 plus course- level teaching resource types	Model 7: Model 6 plus interaction	Model 8: Model 3 plus course- level knowledge taxonomy	Model 9: Model 8 plus interaction
lns1_1_1	1.73***	1.63***	1.24**	-11.46	-14.97*	-14.24	-14.17	-22.22**	-17.60*
_cons	(5.64)	(5.51)	(3.22)	(-0.02)	(-2.00)	(-1.75)	(-1.73)	(-3.05)	(-2.42)
lnsig_e	3.36***	3.13***	3.12***	3.12***	3.12***	3.13***	3.13***	3.12***	3.12***
_cons	(143.46)	(133.74)	(133.23)	(133.84)	(133.70)	(134.01)	(133.98)	(133.93)	(133.80)
N	919	919	919	919	919	919	919	919	919
AIC	8802.19	8395.76	8382.46	8379.97	8379.83	8381.08	8382.04	8377.99	8376.06
BIC	8816.66	8434.35	8440.34	8461.97	8476.30	8448.61	8454.39	8445.51	8453.23

Note: t statistics in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

Model 2 includes student-level indicators. The results show that students who logged in more times ($p < .001$) and stayed logged into the LMS an overall longer time ($p < .001$) had significantly higher final grades. In addition, students who received special education ($p = .009$) and who took the online course for credit recovery ($p < .001$) had significantly lower final grades than their counterparts.

Model 3 adds instructor-level data. As seen in Table 7, students whose instructors earned a master's degree ($p = 0.001$) had significantly lower final grades than students from other teachers' courses. We also compared teachers of different instructor types. For lead instructors, full-time, and part-time instructors, their students' final grades did not differ significantly. However, students of iEducators had significantly lower final grades than students of other instructor types ($p = .016$).

Models 4-7 included all course-level indicators. Model 4 included assignment type and Model 5 included the interaction between assignment type and credit recovery. Using the results from Model 5 showed that while more project-based assignments resulted in better learning outcomes ($p = .013$), other assignments such as quiz, or discussion actually resulted in more negative learning outcomes. However, the interaction between credit recovery and assignment type suggested that for students who took online course for credit recovery, taking more quizzes actually helped them gain better learning outcomes ($p = .030$).

Model 6 uses resources type as the content-level factor, and Model 7 includes the interaction between content- and student-level variables. The result shows that more text-based resources in the online courses resulted in better learning outcomes ($p = .010$); in this regard, there was no difference among students who took the online course for different reasons.

We also examined the impact of knowledge level covered in the course assignments on students' learning outcomes and the interactions between knowledge level and student information. The results suggested that engaging students in more lower-level knowledge activities such as remembering and understanding had a negative impact on students' learning outcomes; however, no interaction effects were found in this aspect.

Themes in Course Design

Following the quantitative analyses on course-level indicators, content analysis was used to look more deeply into the course design elements that were significant for students' online ELL learning and how these elements facilitated student learning. As a result, a total of four themes that are crucial for online language learning were generated.

Instructor Guide

From the quantitative analysis of course-level factors and student learning, it was shown that text-based resources were beneficial for student learning, and the instructor guide was a big component of the text-based resources. Across the eight courses examined in this study, the instructor guide was provided in various formats, such as a rubric, text-mapping, flow chart, bibliography cards, etc. For example, in English 10B, an organizer chart was provided when students read *All Quiet on the Western Front*, asking students to list the traits of the characters, provide evidence from the novel that reveals the traits, and explain how it was revealed to help students better understand the reading material. Another purpose of the instructor guide was to provide students an example of

how to finish an assignment. For example, when the English 10B instructor asked students to create a goal map using a graphic organizer, the instructor provided a sample goal map which included a comprehensive picture of achieving a goal, including “reasons of why that is your goal,” “timeline for reaching the goal,” “actions you need to take to reach the main goal,” “people you need to reach your main goal,” etc. This assignment not only helped students improve their writing skills, but also provided a way to help students organize their thinking and learn how to visually present their learning.

The instructor guide was also used to provide students with more structured writing guidance. To help American Literature 12A students understand how to use quotations in their writing, a Quotation Sandwich was provided to explain the process and what each section was for in a vivid way: “the top slice of bread, or claim;” “the meat, or quote;” “after the second slice of bread, you need more meat;” and “the bottom slice of bread, or commentary.” These instructor guides contributed greatly to scaffolding student learning, especially in the online environment, to help students organize information, deepen their thinking, and improve their writing.

Learning Autonomy

As shown in the aforementioned analysis, project-based assignments, which provide students more autonomy and flexibility in learning, were beneficial for students’ final grades. In online learning, it is important to provide students with learning autonomy so they will identify themselves as active learners rather than passive receivers of the content knowledge (Liaw, Huang, & Chen, 2007). In the eight online courses, there were a couple of examples where students were provided learning autonomy to a certain degree to more actively engage in project-based learning. For example, in English 10A when the topic was Digital Storytelling, the instructor provided students with resources covering various categories of digital stories and asked students to “choose a category that interests you,” providing multiple sources for learners to create their own digital story, including Garage Band, iMovie, Photostory, Kizoa, etc. Similarly, in English 10B, which included a project-based assignment, students were asked to create a multimedia presentation for their own research, and given the freedom of choosing various tools for this project. Students were even encouraged to use other digital media to help grab the audience’s attention. The instruction for this assignment is included below.

You have the freedom to be creative with this project, but still include all the parts of the research necessary. Use either Glogster or Prezi for your presentation.

For your attention grabber, use a type of media within your presentation such as Penzu, Bubbl.us, Vimeo, Storybird, Xtranormal, Voki, Tiki Toki, etc.

Feedback and Interaction

As shown in the quantitative analysis, assignments on the discussion board did not really help improve students’ learning outcomes. While closely examining discussion board assignments, it was found that in most cases, discussion boards were only used as a platform to submit student writing or assignments, when less feedback was required from either the instructor or peer students. There were a few cases where peer feedback was encouraged, which could potentially enhance interactions among peers and build a learning community where students can learn not only from

the instructor, but also from each other. For example, in English 10A where students were asked to post the introduction of their argumentative essay on the discussion board, the instructor also encouraged them to provide peer feedback.

Feel free to read each others [other's] introductions and feedback. Reading each others [other's] writing will often provide insights on how to improve our own writing. If you wish to reply to another classmate's posting, remember to exercise discretion. Exposing our thoughts through our writing often causes us to feel vulnerable. This is not a place for you to correct each others [other's] work. I encourage you to offer polite suggestions or compliments but remember to do so in a non-judgmental way.

Similarly, in an English 9B assignment students were asked to respond to the question “What people and events most change me?” as it applies to the character Montag after reading “The Hearth and The Salamander” and required to provide feedback to peers as part of the assignment. Detailed instruction about how to agree or disagree with peers was provided.

In addition to addressing the above questions, in a separate response, please respond to one of your classmate's postings. In your response, you could identify whether you agree or disagree with his or her comments. Be sure to develop your response by stating what you agree or disagree with and why. Or maybe your classmate provoked you to see something that you had not previously seen. If so, you could share this with him or her.

You will not receive a grade for this assignment until you make two postings: one where you address the original prompt and one where you respond to your classmate's response.

In addition, interactions could be more than feedback exchange among students. In this study, the researcher also detected students' interactions with the assessment tools. For example, in an activity in British Literature 11B on “Investigating research rubric”, instead of just simply asking students to read the rubric, the instructor asked students to investigate the rubric before starting to compose the article.

Before you start drafting your essay, it is important to take a closer look at what is really being asked of you. Follow the link that takes you to an activity using the rubric (scoring guide) for this essay. I have included the criteria that will be used to score the essay. You should write each criteria in your own words; then explain how you will complete this criteria in your essay. I have done a few for you.

Asking students to reflect on and write the rubric in their own words can help students connect reading with writing and think more critically and deeply about their own writing, which is of great importance for distance education and language learning (Carico & Logan, 2004; Garrison, Anderson, & Archer, 2009;)

Sense of Audience and Authorship

Sense of audience and authorship is of great importance for language learning as it can potentially help learners develop their identity as authentic readers and writers and ultimately help improve students' language development (Warschauer & Grimes, 2007). In American Literature 12A, a unit

focused on Zora Neale Hurston's novel *Their Eyes were Watching God*, helped learners gain more background information about the author. Students were first instructed to listen to an NPR interview conducted with the author's niece. Following that activity, the instructor directed students to conduct a mock interview with the author and provided specific instruction about how to conduct a mock interview.

For this assignment, you need to be a bit creative, and you will need to do a little research. Try to go beyond the obvious when you create your interview questions and be sure to avoid asking close-ended or "yes or no" questions.

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*If you really want to make this mock interview authentic, you could try to incorporate dialect. Imagine what Hurston might sound like and write her responses like she would speak them. This might look similar to the way that she writes in *Their Eyes Were Watching God*.*

This assignment could really help students engage in a dialogue with the author. Students' sense of authorship during reading could help them develop their identity as an active reader as well. At the same time, the process of preparing mock interview questions could also help students develop their identities as real writers by learning how to conduct interviews that lead to writing projects.

A similar assignment that helped students develop a sense of audience and authorship while also helping students learn writing in different genres was in American Literature 12B. After reading two chapters from *The Things They Carried*, students were asked to write a letter based on the following instruction:

Imagine that you are the narrator and that you are preparing to explain to your daughter the truth about this particular event. What would you say to her? How would you address the fact that you lied to her originally?

In a follow-up activity, another genre of writing – email – was assigned for students to have a conversation with some real person. The detailed instruction is as follows:

After viewing "Is Walmart Good for America?," you are going to spend some time ruminating over the program's message. Think about the question: "Is Walmart Good for America?" Prepare an answer for this question (Remember that there is no right or wrong answer to this question; it is just an opinion). Find evidence to support your opinion.

Once you have answered that question and found supporting evidence, you are going to write an email to Ray Bracy, Walmart's VP of Federal and International Public Affairs, where you articulate your thoughts about Walmart's business practices. Discuss why you support or frown upon the company's practices. You could offer suggestions for improvements if you so desire.

Having students engage in this kind of writing could be beneficial for strengthening their sense of audience and authorship, helping them familiarize themselves with writing in various genres, and developing their writing skills in an authentic learning environment.

Discussion

This study comprehensively examined the impact of student-, instructor-, and course-level factors on students' academic achievement in online English language and literature courses, while also summarizing themes that instructors should focus on while teaching online language courses. The findings suggest that students who took courses for different reasons have different learning outcomes, with credit recovery students having significantly lower final scores than their counterparts. Oliver and Kellogg (2015) found two general reasons for credit recovery students failing a course in face-to-face settings, with the primary reason being a lack of self-discipline and a secondary being teaching issues, based on students' self-report data. Students reported that taking courses online helped them address both issues since learning was more self-paced and more one-on-one teacher support was provided. Even though in our study credit recovery students were still behind their counterparts, it is worthwhile comparing students' performance in face-to-face and online environments when students take online courses for different reasons. In addition, students' login times and duration significantly predicted their learning outcomes. Thus, it is important for instructors to encourage their students to should put more time into their online courses.

In terms of teacher impact, a surprising finding of this study was that for teachers who held a master's degree, their students had significantly lower final grades than students of teachers who held a bachelor's degree. This finding was similar to another study conducted among world language courses at MVS which revealed that teachers' education level had a negative impact on their teaching practices (Lin & Zheng, 2015). A previous review (Wayne & Youngs, 2003) has also suggested that inconclusive results were found regarding teachers' educational degree on student learning, with some studies reporting a positive influence while quite a few report negative results. This was also supported by Hanushek (1971) who argued that the teachers' education degree was unrelated to students' academic achievement. However, with the small number of instructors and limited teacher variables involved in this study, it was difficult to explain why teachers' education level seemed to be negatively related to their students' academic achievement.

The researcher also examined another teacher-level variable – instructor type – and its impact on student learning. The result suggested that students whose teachers were iEducators tended to have lower final scores than those who have teachers identified as other instructor types (i.e., full-time, part-time, lead instructor). iEducators tended to have less teaching experience than other instructors, so it was not surprising that their students had lower final scores on average.

We further looked into three course-level factors and their impact on students' learning outcomes. Our findings suggested that more project-based assignments, text-based resources (such as the instructor guide), and fewer lower-level knowledge activities could be beneficial for students' English language learning. This was not the case for all students. For credit recovery students, having more quizzes in the course actually helped them improve their learning significantly. This was most likely because for credit recovery students, who tended to lag behind their counterparts, taking quizzes helped them better understand the foundations of English language, through mostly the language-

level checkups such as grammar and word use. Using content analysis, the researcher also summarized several themes in course design that could be extremely beneficial for online language learning; these are: the importance of an instructor guide, providing students with learning autonomy, promoting students' feedback and reflection, and developing students' sense of audience and authorship.

Implication & Future Research

Unlike many studies in K-12 online learning that use self-perceived data and only consider learner differences, this study used actual data from both the LMS and final scores together with instructor- and course-level factors to investigate the relationships among student activity, instructor characteristics, course design elements, and students' online learning outcome.

This study provides three significant implications for both practice and research. First, for practice, this study suggests the inclusion of project-based assignments, which usually involve higher-level knowledge skills (e.g., analyze, evaluate, and create), in online course design, as it may increase students' learning outcomes.

Second, this study suggests a careful design of online discussion assignments. The results showed that online discussion resulted in a decrease in learning outcomes. This does not mean online discussion is detrimental. Instead, based on sociocultural theory, the researcher believes discussion is important in online learning, especially for ELL courses. A careful look reveals that most discussion assignments simply asked students to post their writing in the discussion board without asking students to interact further with peers or instructors. In other words, the affordances of discussion in online courses were not fully explored, at least from the eight courses analyzed. The researcher suggests that online teachers and course designers involve social interaction when designing discussion-based assignments.

Third, while a large percentage of the text-based resources in this study were the instructor guide, this study suggested that online instructors or course designers could consider including more text-mapping or organizers to better scaffold students' reading comprehension and writing process in English language courses, which were shown to be positively related to students' learning outcomes.

This study also fills the current research gap in K-12 online ELL learning by examining the predictors of students' learning outcomes from all student-, instructor, and course-levels, using actual student activity data and course data. Further research could closely examine course design elements using qualitative data, such as interviews with the instructors or course designers, to provide a triangulation of how course elements were designed and in which ways they can be improved to enhance students' learning outcome.

References

- Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives* (Complete edition). New York: Longman.
- Carico, K. M., & Logan, D. (2004). A generation in cyberspace: Engaging readers through online discussions. *Language Arts*, 81(4), 293-302.
- Cavanaugh, C. (2001). The effectiveness of interactive distance education technologies in K-12 learning: A meta-analysis. *International Journal of Educational Telecommunications*, 7(1), 73.
- Freidhoff, J. (2017). *Michigan's K-12 virtual learning effectiveness report 2015-2016*. Michigan Virtual University. Retrieved from http://media.mivu.org/institute/pdf/er_2016.pdf
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education*, 15(1), 7–23. Retrieved from <https://doi.org/10.1080/08923640109527071>
- Hanushek, E. A. (1971). Teacher characteristics and gains in student achievement: Estimation using micro data. *American Economic Review*, 61(2), 280–288. Retrieved from <http://www.jstor.org/stable/1817003>
- Jabeen, S. S., & Thomas, A. J. (2015). Effectiveness of Online Language Learning. In *Proceedings of the World Congress on Engineering and Computer Science* (Vol. 1). Retrieved from http://www.iaeng.org/publication/WCECS2015/WCECS2015_pp297-301.pdf
- Lantolf, J. P., & Thorne, S. L. (2008). Sociocultural theory and second language learning. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: An introduction*. New York: Routledge.
- Liaw, S. S., Huang, H. M., & Chen, G. D. (2007). An activity-theoretical approach to investigate learners' factors toward e-learning systems. *Computers in Human Behavior*, 23(4), 1906–1920. <https://doi.org/10.1016/j.chb.2006.02.002>
- Lin, C.-H., & Zheng, B. (2015). Teaching practices and teacher perceptions in online world language courses. *Journal of Online Learning Research*, 1(3), 275–303. Retrieved from <https://www.learntechlib.org/d/171055>
- Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record*, 115(3), 1–47. Retrieved from https://www.sri.com/sites/default/files/publications/effectiveness_of_online_and_blended_learning.pdf
- Moore, M. G. (1989). Three types of interaction. *The American Journal of Distance Education*, 3(2), 1–6. <https://doi.org/10.1080/08923648909526659>

- Oliver, K., & Kellogg, S. (2015). Credit Recovery in a Virtual School: Affordances of Online Learning for the At-Risk Student. *Journal of Online Learning Research*, 1(2), 191–218. Retrieved from <https://www.learntechlib.org/p/149111/>
- Swan, K. (2003). Learning effectiveness: what the research tells us. In J. Bourne & J. C. Moore (Eds) *Elements of Quality Online Education, Practice and Direction*. Needham, MA: Sloan Center for Online Education, 13-45.
- Warschauer, M., & Grimes, D. (2007). Audience, authorship, and artifact: The emergent semiotics of Web 2.0. *Annual Review of Applied Linguistics*, 27, 1–23. <https://doi.org/10.1017/S0267190508070013>
- Watson, J., Pape, L., Murin, A., Gemin, B., & Vashaw, L. (2015). *Keeping pace with K-12 digital learning: An annual review of policy and practice*. Retrieved from <https://static1.squarespace.com/static/59381b9a17bffc68bf625df4/t/5949b64bb11be1ad7855fb51/1498003034517/KeepingPace+2015.pdf>
- Wayne, A. J., & Youngs, P. (2003). Teacher Characteristics and Student Achievement Gains: A Review. *Review of Educational Research*, 73(1), 89–122. <https://doi.org/10.3102/00346543073001089>
- Zandberg, I., & Lewis, L. (2008). Technology-Based Distance Education Courses for Public Elementary and Secondary School Students: 2002-03 and 2004-05. Statistical Analysis Report. NCES 2008-008. *National Center for Education Statistics*. Retrieved from <http://eric.ed.gov/?id=ED501788>
- Zheng, D., Young, M. F., Wagner, M. M., & Brewer, R. A. (2009). Negotiation for Action: English Language Learning in Game-Based Virtual Worlds. *The Modern Language Journal*, 93(4), 489–511. <https://doi.org/10.1111/j.1540-4781.2009.00927.x>

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